**Mechanical regulation of actin networks and the plasma membrane**Organized networks of actin filaments drive membrane protrusions,  
guide intracellular organization, and contribute to the mechanical  
rigidity of eukaryotic cells.  In each of these roles, actin networks  
and membranes are exposed to external forces.  While the biochemical  
basis for assembly and disassembly of diverse actin networks has  
received significant attention, the role of physical constraints is  
less well understood.  This talk will present optical and force  
microscopy studies that show mechanical forces play a crucial role in  
organizing actin structures and membrane shape change.  These results  
draw attention to the importance of physical boundary conditions in  
understanding the molecular mechanisms that govern cellular  
organization.